


**SANYO Semiconductors**

# DATA SHEET

## 2SC5551A — NPN Epitaxial Planar Silicon Transistor High-Frequency Medium-Output Amplifier Applications

### Features

- High  $f_T$  : ( $f_T=3.5\text{GHz typ}$ ).
- Large current : ( $I_C=300\text{mA}$ ).
- Large allowable collector dissipation ( $1.3\text{W max}$ ).

### Specifications

**Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$ 

| Parameter                    | Symbol    | Conditions                                                    | Ratings     | Unit |
|------------------------------|-----------|---------------------------------------------------------------|-------------|------|
| Collector-to-Base Voltage    | $V_{CBO}$ |                                                               | 40          | V    |
| Collector-to-Emitter Voltage | $V_{CEO}$ |                                                               | 30          | V    |
| Emitter-to-Base Voltage      | $V_{EBO}$ |                                                               | 2           | V    |
| Collector Current            | $I_C$     |                                                               | 300         | mA   |
| Collector Current (Pulse)    | $I_{CP}$  |                                                               | 600         | mA   |
| Collector Dissipation        | $P_C$     | When mounted on ceramic substrate (250mm <sup>2</sup> ×0.8mm) | 1.3         | W    |
| Junction Temperature         | $T_j$     |                                                               | 150         | °C   |
| Storage Temperature          | $T_{stg}$ |                                                               | -55 to +150 | °C   |

**Electrical Characteristics** at  $T_a=25^\circ\text{C}$ 

| Parameter                | Symbol    | Conditions                         | Ratings |     |     | Unit |
|--------------------------|-----------|------------------------------------|---------|-----|-----|------|
|                          |           |                                    | min     | typ | max |      |
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}=20\text{V}, I_E=0\text{A}$ |         |     | 1.0 | μA   |
| Emitter Cutoff Current   | $I_{EBO}$ | $V_{EB}=1\text{V}, I_C=0\text{A}$  |         |     | 5.0 | μA   |

Continued on next page.

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## 2SC5551A

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| Parameter                               | Symbol        | Conditions             | Ratings |      |     | Unit |
|-----------------------------------------|---------------|------------------------|---------|------|-----|------|
|                                         |               |                        | min     | typ  | max |      |
| DC Current Gain                         | $h_{FE1}$     | $V_{CE}=5V, I_C=50mA$  | 90      |      | 270 |      |
|                                         | $h_{FE2}$     | $V_{CE}=5V, I_C=300mA$ | 20      |      |     |      |
| Gain-Bandwidth Product                  | $f_T$         | $V_{CE}=5V, I_C=50mA$  |         | 3.5  |     | GHz  |
| Output Capacitance                      | $C_{ob}$      | $V_{CB}=10V, f=1MHz$   |         | 2.9  | 4.0 | pF   |
| Reverse Transfer Capacitance            | $C_{re}$      | $V_{CB}=10V, f=1MHz$   |         | 1.5  |     | pF   |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=50mA, I_B=5mA$    |         | 0.07 | 0.3 | V    |
| Base-to-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=50mA, I_B=5mA$    |         | 0.8  | 1.2 | V    |

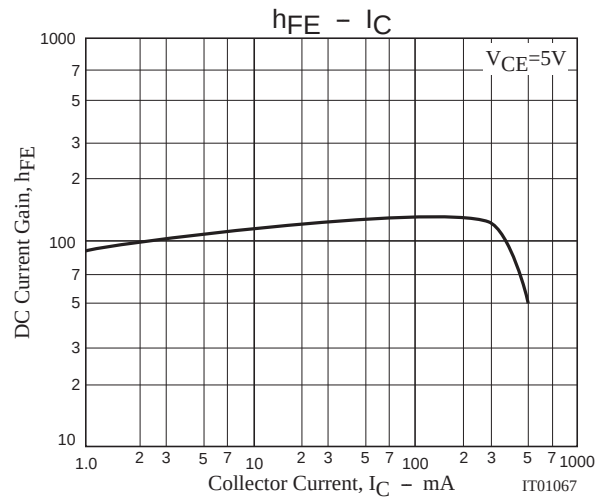
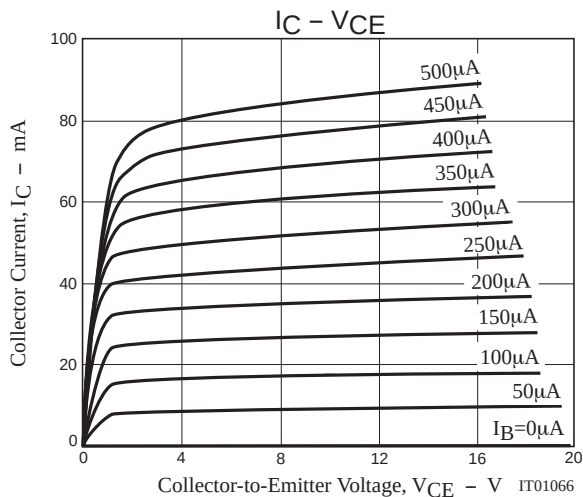
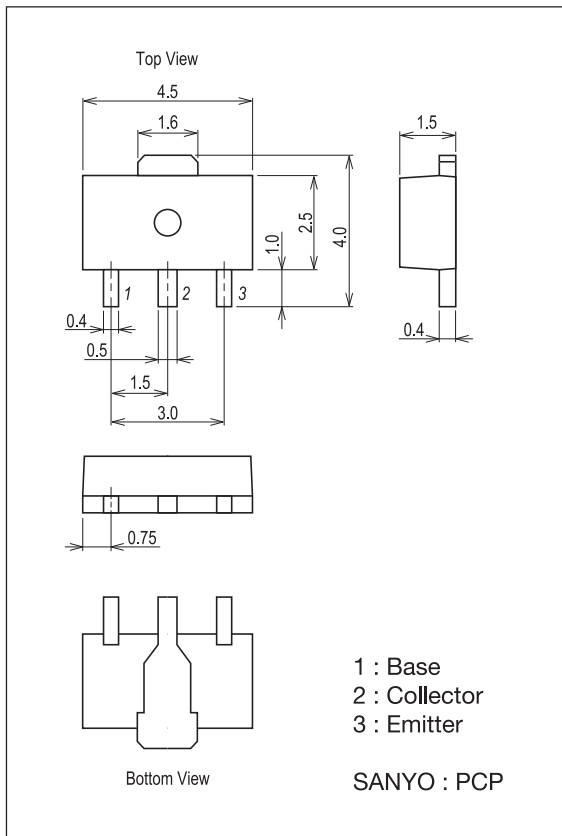
\* : The 2SC5551A is classified by 50mA  $h_{FE}$  as follows :

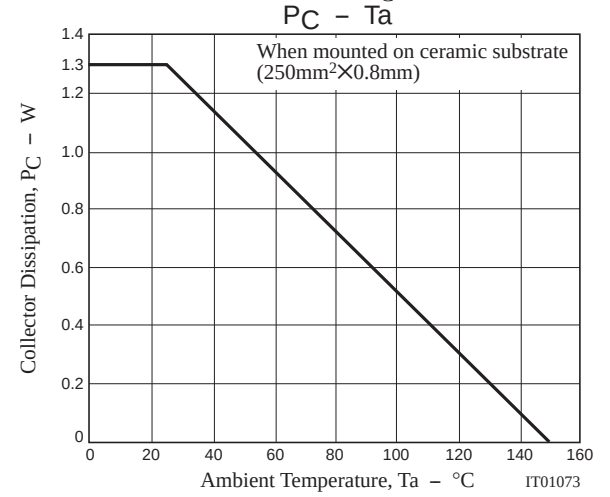
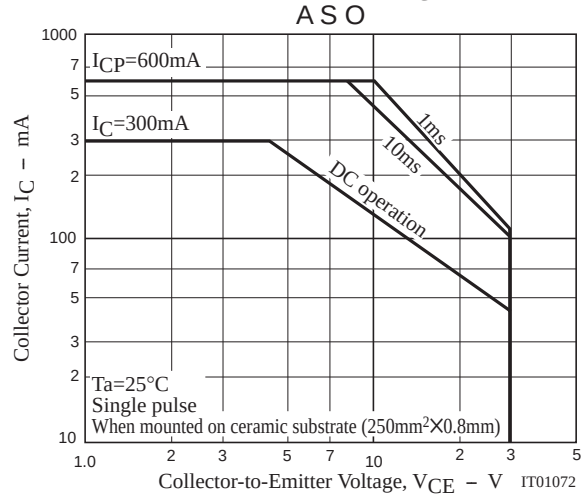
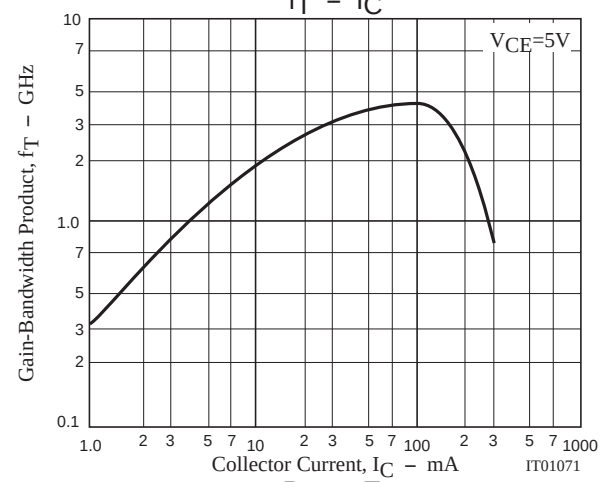
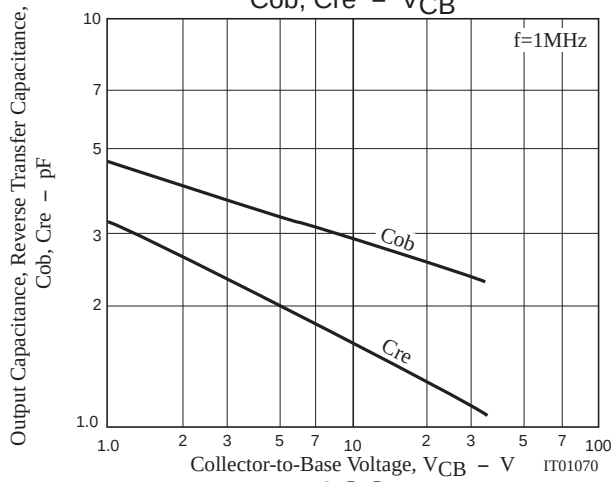
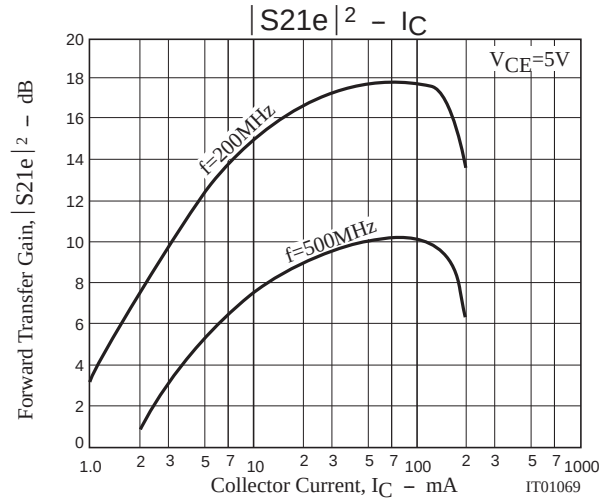
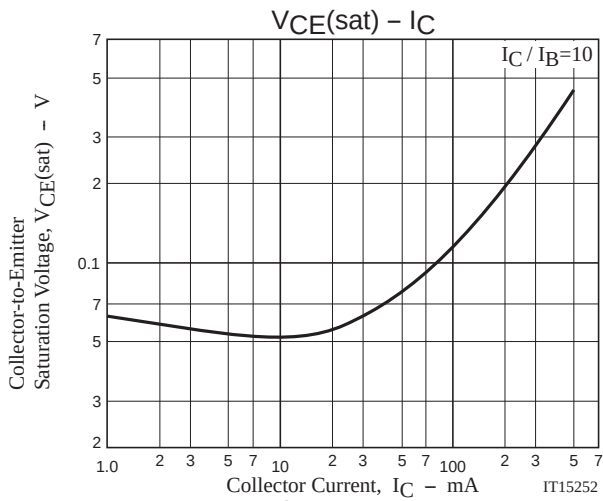
| Marking  | EB E      | EB F       |
|----------|-----------|------------|
| Rank     | E         | F          |
| $h_{FE}$ | 90 to 180 | 135 to 270 |

## Package Dimensions

unit : mm (typ)

7007B-004





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